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A new species of *Neosporidesmium* from Hainan, China

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Abstract — *Neosporidesmium diaoluoshanense* sp. nov., collected on rotten branches from tropical forest of Hainan Province, China, is described and illustrated. It differs from previously described *Neosporidesmium* species in producing conidia that possess a colourless, globose, mucilaginous sheath at the apex.

Key words — asexual fungi, key, taxonomy

Introduction

The genus *Neosporidesmium* was established by Mercado & Mena (1988) for a single species, *N. maestrense*. Subsequently seven other species have been described: *N. sinensis* and *N. microsporum* (Wu & Zhuang 2005); *N. antidesmatis, N. malloti,* and *N. xanthophylli* (Ma et al. 2011a); *N. micheliae* (Zhang et al. 2011a); and *N. vietnamense* (Mel'nik & Braun 2013). The genus is characterized by effuse, dark brown to black, hairy colonies, unbranched conidiophores aggregating into erect, cylindrical, dark brown to black synnemata and integrated, terminal, monoblastic, lageniform or doliiform, determinate or percurrently proliferating conidiogenous cells that produce solitary, pale brown to brown, obclavate or cylindrical, smooth, distoseptate conidia. The criteria used for species delimitation are mainly based on proliferations of conidiogenous cells, conidial morphological characteristics, and conidiomatal overall size (Mercado & Mena 1988, Wu & Zhuang 2005).

The tropical forests of southern China have a rich mycobiota, and many new species have been discovered there (Zhang et al. 2009a,b, 2011b, Ma et al. 2011a,b, 2012). During a continuing investigation on saprobic microfungi from tropical forest of Hainan Province, a morphologically distinct species of *Neosporidesmium* was found. It is proposed here as a new species.

Neosporidesmium diaoluoshanense Xiang Y. Li & X.G. Zhang, **sp. nov.** Fig. 1

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Differs from other *Neosporidesmium* species in its conidia having an apical, colourless, globose, mucilaginous sheath.

Type: China, Hainan Province: Diaoluoshan Nature Reserve, on rotten branches of an unidentified tree, 10 Apr. 2014, H.X. Dong (**Holotype** HSAUP H7562; **isotype**, HMAS 243460).

Etymology: in reference to the type locality.

Colonies on the natural substrate effuse, solitary, dark brown, hairy. Mycelium partly superficial, partly immersed in the substratum, composed of dark brown to black, septate, cylindrical hyphae. Conidiomata synnemata, indeterminate, scattered, erect, up to 605 µm high, 40–60 µm wide, composed of straight, unbranched, septate, smooth, brown to dark brown conidiophores 3–6 µm wide, diverging terminally and laterally. Conidiogenous cells monoblastic, integrated, determinate, smooth, cylindrical, doliiform or lageniform, brown to dark brown, 4–10 × 9–15 µm. Conidial secession schizolytic. Conidia solitary, acrogenous, obclavate, base truncate, 8–11-distoseptate, 105–135 × 10.5–13.5 µm, 2.5–3.5 µm wide at the truncate base, rounded at the apex, dry, smooth-walled, pale brown, but hyaline at the apical cells, with an apical, globose, hyaline, 10.5–13.5 µm diam., mucilaginous sheath.

Comments – *Neosporidesmium diaoluoshanense* differs from all previously described species in the genus by producing conidia with an apical, globose, mucilaginous, hyaline sheath and having scattered synnemata. The new species resembles *N. micheliae*, which differs by having conidia with fewer septa (7–8) and lacking a mucilaginous sheath.

Key to *Neosporidesmium* species

1.	Conidiogenous cells with percurrent proliferation	2
	Conidiogenous cells without percurrent proliferation	4
2.	Conidia nearly cylindrical	*N. microsporum*
	Conidia obclavate	3
3.	Conidia with filiform beak	*N. antidesmatis*
	Conidia without beak	*N. maestrense*
4.	Synnemata scattered	5
	Synnemata not scattered	6
5.	Conidia distoseptate	*N. diaoluoshanense*
	Conidia euseptate	*N. micheliae*
6.	Conidia with beak	7
	Conidia without beak	*N. malloti*
7.	Conidia euseptate	*N. vietnamense*
	Conidia distoseptate	8

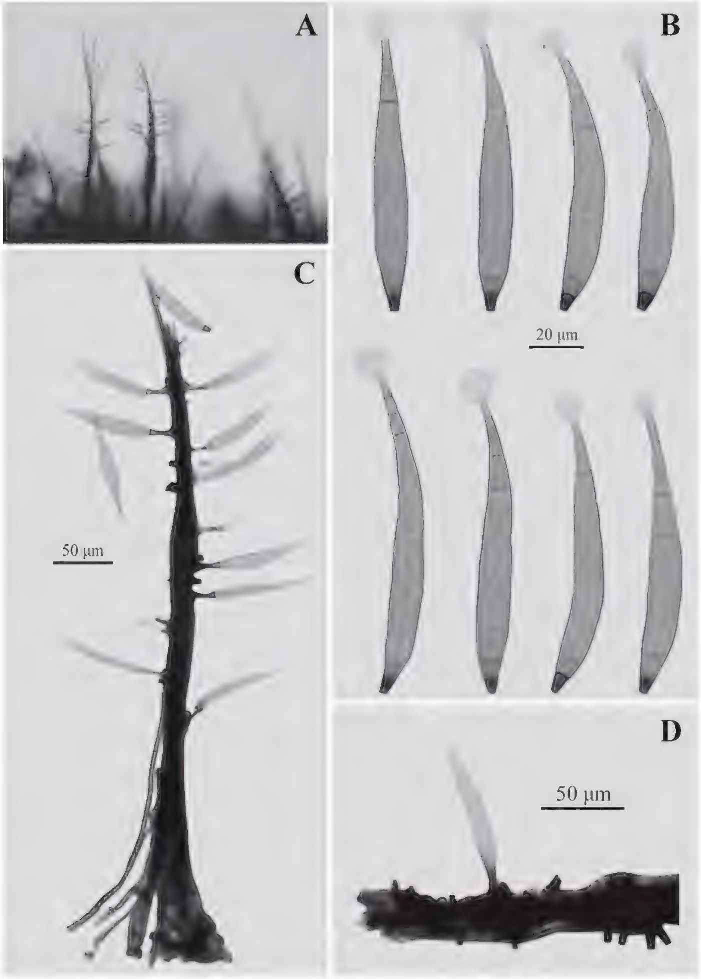

Fig. 1. *Neosporidesmium diaoluoshanense.* A. Synnemata on natural substratum. B. Conidia with an apical, hyaline, globose, mucilaginous sheath. C, D. Synnemata with conidiophores and conidia.

8.	Conidia with 6–10 distosepta	*N. xanthophylli*
	Conidia with 10–11 distosepta	*N. sinensis*

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